



United States  
Office of Personnel Management

# **FWS Job Grading Standard for Sewing Machine Operator**

**3111**

**TS-15, 171**

**Workforce Compensation and Performance Service  
Classification Programs Division  
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## WORK COVERED

This standard covers nonsupervisory work which involves operating power sewing machines to sew, alter, or repair wearing apparel, linens, blankets, and other fabric articles. This includes operation of automatic sewing machines when the operator must know how to thread the machine, wind bobbins, adjust tension, and oil parts.

## WORK NOT COVERED

The following kinds of work are not covered by this standard:

- fitting and marking needed alterations,
- measuring and cutting materials in making new items,
- designing and making items for special purposes,
- sewing leather,
- using a heat-sealing machine to patch items, and
- repairing tents and similar canvas items when the work involves special knowledge, e.g., where various types and sizes of grommets, eyelets, and other hardware should be placed, diameter of rope to be used, rope-splicing techniques, etc.

## TITLES

Jobs graded by this standard are to be titled *Sewing Machine Operator*.

## GRADE LEVELS

This standard does not describe all possible levels at which jobs might be established. If jobs differ substantially from the skill, knowledge, and other work requirements described in the grade levels of the standard, they may warrant grading either above or below these grades.

## NOTES TO USERS

The type of item sewed, the type of sewing machine used, and the location of a job on a production line or in an alteration shop are not considered by themselves as grade determining. Differences in grades are based on the difficulty in the techniques needed to manipulate material for sewing, degrees of preciseness needed, and the judgment required to accomplish the desired effect:

- The type of item being sewed is considered from the standpoint that the type of material (e.g., cotton versus rayon, nylon, and wool), the complexity of construction, and the purpose for which the item is used (serviceability versus appearance) affect the grading factors of skill, knowledge, and responsibility.

- Some sewing machines can be used for both easy and difficult operations. It is not the type of machine used, but the operation performed that is important in grading. Although sewing machines are often designed for a special purpose (e.g., heavy-duty sewing, basting, sewing on buttons, making buttonholes, bartacking, etc.), essentially the same skills are used in threading, changing needles, winding bobbins, adjusting tension, and oiling parts of the various machines.
- Production line operators (manufacturing) often use special machines, attachments, and highly specialized techniques which are not feasible for use in alteration shops; items are sewed in the same way repetitively for long periods. In contrast, alteration operators consider individual differences of the items being sewed; they use judgment in locating defects, matching replacement parts, tapering seams, etc.

**3111-3 SEWING MACHINE OPERATOR, GRADE 3****3111-3**

*General:* Grade 3 sewing machine operators have a basic knowledge of sewing machine operation. They do sewing involving minor alinements and positioning of material or mending of utility organization items such as hospital pajamas, blankets, linens, canvas pouches, and fatigue clothes where usefulness of the item is more important than the appearance. Below are examples:

*In sewing new items:*

- Basting edges with basting machine;
- Using button sewing machine to sew buttons on marked locations;
- Binding straight edges of material;
- Turning material under and sewing straight hem in small items such as pockets or upper edge of cuff for garments;
- Hemming press covers;
- Taking in seam allowance by sewing straight edges of pillow cases;
- Using bartacking machine to install labels or tack finished parts.

*In mending or altering items:*

- Mending tears or rips by straight stitching;
- Darning;
- Replacing buttons;
- Shortening or lengthening work trousers or other garments used for utilitarian purposes.

*Skill and Knowledge:* Grade 3 operators know how to thread the machine, wind bobbins, adjust tension, and oil parts. They know how to use the knee or foot controls to start and stop the sewing machine at the same time they are using hand-eye coordination in positioning and guiding material under the needle for stitching.

Sewing at this level involves minor alinements and positioning of materials, e.g., straight or slightly curved stitching, or techniques such as button sewing or bartacking. Most of the sewing is done on various weights of cotton or polyester-cotton blends which stay in place for stitching.

*Responsibility:* In sewing new items, production line operators follow precise instructions repetitively for long periods in meeting specified quotas. They sew one part of an item which must fit properly with other parts for the end products to be identical. For this reason, close inspection is made of the work for accuracy, neatness, and to see whether instructions were followed.

In mending, operators locate and mend obvious defects such as ripped seams, missing buttons, or small holes, according to set procedures. In altering, they shorten or lengthen as instructed. Preciseness is not as important at this level of alteration as it is at higher grades; therefore, items

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are checked to see that they are restored to serviceability and that instructions have been followed.

*Physical Effort:* Operators sit for long periods with continual" movement of hands, arms, and fingers in placing items in position and sewing. They handle lightweight items up to 5 kilograms (10 pounds) continually, and occasionally they handle items up to 14 kilograms (30 pounds).

*Working Conditions:* The work is performed inside in well lighted and ventilated areas. Often these areas are noisy because numerous machines are operating at one time. Operators are subject to possible needle punctures and minor thread cuts.

**3111-4 SEWING MACHINE OPERATOR, GRADE 4****3111-4**

*General:* Grade 4 operators do frequent alinements and positioning, e.g., irregular shapes, round, or square corners. They do topstitching and repair or alter wearing apparel when appearance is important in the finished product. (By comparison, grade 3 operators do straight or slightly curved stitching on inside seams or simple mending on work clothes or other items where emphasis is on serviceability rather than appearance.) Below are examples:

*In sewing new items:*

- Sewing small units such as pocket flaps, shoulder loops, patch pockets which involve topstitching, square corners, or curved edges;
- Operating buttonhole machine to make buttonholes in shirts, trousers, and similar articles;
- Appliqueing designs on flags, guidons, and brassards taking care to follow the exact contours of the design;
- Double-needle joining operations of straight edges taking care to match lines and seams. (Many of the operations at this level require production line operators to have skill in using sewing machine attachments on straight edges, e.g., folder, knife, etc.)

*In mending or altering items:*

- Making alterations in dress apparel which do not involve changing basic cut or fit of item, e.g., blindstitching hems in woolen trousers or topstitching chevrons on uniforms;
- Repairing work clothes or similar utility items involving judgment in matching sizes and colors and replacing parts, e.g., replacing zippers in field jackets or sleeping bags; matching materials in patching faded wearing apparel.

*Skill and Knowledge:* In addition to knowledge of basic sewing machine operations required at the grade 3 level, grade 4 operators do work which requires dexterity, frequent alinements, or preciseness in techniques such as sewing irregular shapes, blindstitching, distributing simple fullness, serging (overlocking with knife attachment) or double-needle joining of straight edges.

Most of the materials sewed are cotton, polyester-cotton blends, or similar fabrics which are easily held in place for stitching. However, some repetitive operations may be performed on rayon, nylon, or woolen materials which are more difficult to sew because they tend to slip, slide, pucker, or stretch.

*Responsibility:* More concentration and judgment is required at this level than at grade 3 level because of the preciseness required in topstitching and more difficult techniques. In sewing new items, production line operators are under the same supervisory controls as at the grade 3 level. In altering items, operators do their work according-to an alteration ticket, fitter's pins, chalk marks, or verbal instructions. In repairing items for serviceability, they are responsible for

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locating and mending obvious defects which require ripping of seams and matching sizes and colors of replacement parts. Their work is reviewed for accuracy, neatness, and to see whether instructions have been followed.

*Physical Effort:* Same as described for the [grade 3 level](#).

*Working Conditions:* Same as described for the [grade 3 level](#).

**3111-5 SEWING MACHINE OPERATOR, GRADE 5****3111-5**

*General:* Operators at this level have special skill in sewing or altering items of moderate complexity, e.g., items such as shirts and trousers which have numerous parts, but are unlined. Preciseness is important because of concern for appearance or, in the case of parachutes, because of concern for safety. Grade 5 production line operators use skill in manipulating material requiring a combination of techniques or joining of major components with curved edges in comparison to grade 4 production line operators who usually concentrate on one special technique or make small parts. Grade 5 alteration operators use knowledge of how the item is constructed in altering the basic cut or fit or replacing sections in contrast to grade 4 alteration operators whose work on items requiring precision involves minor changes not affecting the basic fit. Below are examples:

*In sewing new items:*

- Doing difficult techniques such as distributing fullness of sleeve material simultaneously while using a folder attachment and topstitching with double-needle machine to attach flat sleeve to body of khaki shirt.

*In mending or altering items:*

- Taking in crotch, seat, or waist of dress trousers involving tapering according to individual needs and making sure that the garment retains its basic shape;
- Shortening sleeves of dress shirts involving removing and replacing cuff and placket;
- Replacing or patching damaged gores or sections of parachute canopies involving stretching gore to its fullest shape on a padded table, matching patch or section of bias material, and sewing to close tolerances (plus or minus 1/32") taking care to avoid sewing radial lines so that the canopy slides freely.

*Skill and Knowledge:* Grade 5 operators sew all but the most complex items. They regularly work with woolen, rayon, or nylon fabrics. They sometimes do difficult techniques on cotton or similar fabrics which are easier to handle. Production line operators do work requiring a combination of skills or knowledges used at the lower levels, e.g., simultaneous topstitching, use of attachments with special techniques for evening or distributing fullness on curved edges. They often combine major components of articles which involves greater concentration and skill in sewing through several thicknesses of curved edges, e.g., setting a collar. In altering, operators must know how the items are constructed to make decisions such as which seam to rip first, how much to taper without distorting the basic hang or shape of the item, etc.

*Responsibility:* Responsibility of grade 5 operators is distinguished from grade 4 operators in the following:



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*In sewing new items:* Responsibility for using more judgment, preciseness, and concentration in accomplishing steps crucial to the overall appearance of the nearly completed item.

*In mending or altering items:* Responsibility for deciding the necessary steps to carry out assignments within the framework of set procedures and modifying these procedures based on individual characteristics of various items being mended or altered.

*Physical Effort:* Same as described for [grade 3](#) sewing machine operator except in repair of parachute canopies which involves standing for long periods while pinning and basting sections of the parachute and occasionally lifting up to 20 kilograms (45 pounds).

*Working Conditions:* Same as described for [grade 3](#) sewing machine operator.

**3111-6****SEWING MACHINE OPERATOR, GRADE 6****3111-6**

*General:* Grade 6 operators do sewing techniques requiring precision on items that present problems because of their complex construction, weight, and size, such as coats or dress jackets which have several layers of material, e.g., woolen outer garment with canvas interfacing, padding, and rayon lining. Below are examples:

*In sewing new items:*

- Setting an assembled sleeve into the appropriate round armhole of jacket or coat requiring matching notches and distributing extra fullness of the sleeve smoothly over the shoulder to provide the proper shape without gathers, tucks, or puckers;
- Taping and stitching edges of jackets around lapels, down fronts and across bottom, adjusting the tightness or looseness of tape to attain required effect on finished garment, taking care to maintain tolerances set for placement of tape and to avoid distorting line or cutting coat with serging knife.

*In altering items:*

- Making alterations to coats and jackets which require judgment in tapering the seams without distorting the basic shape and hang of the garment, making comparable alterations in linings or interfacings, and replacing linings.

*Skill and Knowledge:* In contrast to the unlined articles sewed by grade 5 operators, grade 6 operators sew lined garments which are more difficult to manipulate in position for precise sewing. These items also involve concern for shaping, padding, and sewing different weights of material which require a higher degree of skill and knowledge than the less complex construction of items sewed at the 5 level.

*Responsibility:* Grade 6 operators use judgment, preciseness, and concentration in accomplishing steps crucial to the overall appearance of the item sewed. They make decisions within the framework of set procedures according to individual characteristics of the items. Because the construction, size or weight of these items present special problems not encountered at the 5 level, the nature of judgments and decisions made is correspondingly more difficult.

*Physical Effort:* Work at this level is more strenuous because items handled are consistently heavier and bulkier than those handled by typical sewing machine operators at lower levels.

*Working Conditions:* Same as described for [grade 3](#) sewing machine operator.